HIGH RISK PATIENTS: DIABETES, HEART FAILURE, RENAL FAILURE, OTHERS (TCTAP A-153 TO TCTAP A-158)

TCTAP A-153

Impact of Diabetes Mellitus on 5-Year Clinical Outcomes in Patients with Significant Coronary Artery Spasm; A Propensity Score Matching Study

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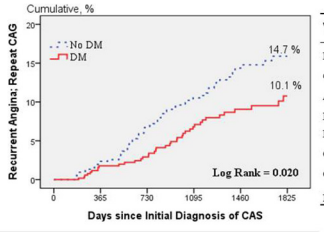
BACKGROUND Diabetes mellitus (DM) is known to be a risk factor of significant coronary artery disease (CAD). However, there is no currently available data with larger study population regarding long-term clinical outcomes of DM with CAS in real world clinical practice, particularly in a series of Korean population.

METHODS A total of 3,360 consecutive patients (pts) without significant CAD underwent acetylcholine (Ach) provocation test and diagnosed as significant CAS between Nov. 2004 and May. 2014 were enrolled. Significant CAS was defined as >70% of narrowing by incremental intracoronary injection of 20, 50 and 100 μg into left coronary artery. Patients were divided into two groups based on the presence of DM: the DM group (n=568), the non- DM group (n=2,762). To adjust potential confounders, a propensity score matched (PSM) analysis was performed using the logistic regression model. Major clinical outcomes up to 5 years were compared between the two groups.

RESULTS After PSM analysis, 2 propensity-matched groups (561pairs, n = 1122, C-statistic=0.690) were generated and the baseline characteristics of the two groups were balanced. At 5 years, despite of similar incidence of individual hard endpoints including mortality, myocardial infarction and revascularization, the DM group was associated with lower incidence of recurrent angina requiring repeat coronary angiography than the non-DM group (HR; 0.60, 95% C.I; 0.40-0.90, p=0.014, Table and Figure).

CONCLUSION Despite the expected endothelial dysfunction, DM was negatively associated with CAS and recurrent chest pain, suggesting that the mechanisms and risk factors of CAS may be different from those of CAD.

Table. Clinical Outcomes up to 5-years after Propensity Score Matching.



Variable, N (%)	HR (95%C.I)	p Value
DM	0.601 (0.400-0.902)	0.014
Gender	1.734 (1.052-2.858)	0.031
Age	1.024 (1.003-1.046)	0.022
Hypertension	0.992 (0.655-1.502)	0.971
Dyslipidemia	1.356 (0.912-2.018)	0.132
Current smokers	1.312 (0.797-2.158)	0.284
Current alcoholics	0.865 (0.540-1.387)	0.549
Myocardial Bridge	0.788 (0.472-1.317)	0.365

TCTAP A-154

Outcomes of Non-Revascularized Unprotected Left Main Coronary Artery Stenosis

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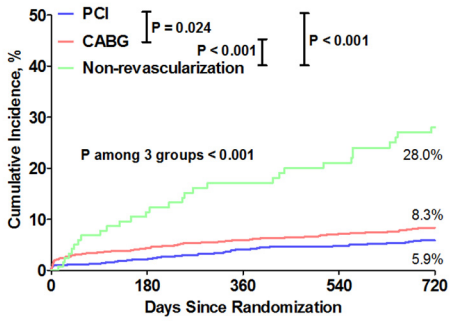
BACKGROUND There is a lack of data regarding the outcomes of medical treatment for stable coronary artery disease (SCAD) involving unprotected left main coronary artery (ULMCA) stenosis.

METHODS From March, 1992 to February, 2011, a total of 3041 patients with significant ULMCA stenosis were enrolled in ASAN-MAIN registry. After excluding the patients in unstable clinical conditions (N = 342), we analyzed those who declined any revascularization procedures (N=153), despite of their assigned physicians' prediction of an acceptable degree of peri-procedural risks and the severity of ULMCA stenosis compelling revascularization, compared with those who underwent percutaneous coronary intervention (PCI, N=993), and coronary artery bypass grafting (CABG, N=1372).

RESULTS The rates of 2-year follow-up were 83.3%, 86.5%, and 66.7% in the PCI, CABG, and non-revascularization groups, respectively (p<0.001). The patients enrolled in the CABG, and the non-revascularization groups were older (PCI vs. CABG vs. Non-revascularization, 60.8±11.2 vs. 63.4±9.1 vs. 66.3±10.9, p < 0.001), and more likely to have lower ejection fraction (61.2±7.6 vs. 57.2±11 vs. 57.9±12.2, p<0.001) diabetes (PCI; 31.6%, CABG; 37.6%, Non-revascularization; 36.6%) than the PCI group. Furthermore, other clinical and angiographic risk factors were more prevalent in these groups, such as diabetes, congestive heart failure, peripheral vascular disease, multivessel disease, distal bifurcation involvement, and right coronary artery disease. The crude 2-year rates of MACCE (PCI, 5.9%; CABG, 8.3%; Non-revascularization, 28.0%; p among the three groups < 0.001) and all of the individual outcomes were higher in the medication group than the others, except for that of stroke showing insignificant difference. Multivariate Cox's proportional hazards model revealed that Non-revascularization was an independent predictor of MACCE (Hazard Ratio [HR], 0.362; 95% Confidence Interval [CI], 0.205 - 0.639; p value < 0.001 for PCI vs. Non-revascularization, HR, 0.376; 95% CI, 0.225 - 0.629; p value < 0.001 for CABG vs. Non-revascularization).

CONCLUSION Although clinical presentation was stable, non revascularized ULMCA stenosis was associated with the higher mortality.

Figure. MACCE over time



No. at risk					
PCI	994	939	872	837	783
CABG	1374	1257	1192	1141	1084
Non-revascularization	153	96	87	81	72

TCTAP A-155

Cyclophilin A Is Associated with Peripheral Artery Disease and Chronic Kidney Disease in Geriatrics: The Tianliao Old People (TOP) Study

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BACKGROUND Cyclophilin A (CyPA), secreted by vascular smooth muscle cells in response to oxidative stress, is important in the pathogenesis of progressive peripheral arterial occlusion disease (PAOD), which is common among chronic kidney disease. We explored the prevalence of PAOD in Taiwan's elderly (^{3} 65 years old) population and its association with CyPA and renal function.

METHODS Residents of Tianliao District, a rural community in southern Taiwan, were surveyed. Anankle-brachial index (ABI) < 0.91 was defined as PAOD. Chronic kidney disease (CKD) was defined based on eGFR levels < 60 mL/min/1.73m^2. Serum CyPA was measured by ELISA.

RESULTS Of the 473 participants, 68 (14.4%) had PAOD. The lower eGFR, lower BMI, higher glycated hemoglobin, and higher pulse pressure were independent predictors of ABI <0.91. Serum CyPA levels in participants with PAOD were significantly higher than those with normal ABI values (47.3 ± 0.4 vs. 25.5 ± 0.2 ng/mL, p <0.001). Moreover, eGFR inversely correlated with serum CyPA level (p < 0.05) in participants with CKD, but not in participants with normal renal function.

CONCLUSION In conclusion, with a prevalence of PAOD as high as 14.1% in an elderly community, CyPA might be the link between PAOD and advanced impaired renal function.

TCTAP A-156

The Impact of Abnormal Admission Glycemic Level on In-Hospital Mortality in Non-Diabetic Patients Undergoing Percutaneous Coronary Intervention

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BACKGROUND Many studies investigated the impact of admission glucose level on in-hospital and short-term outcomes in patients (pts) with acute coronary syndrome. There have been limited data regarding the impact of admission glucose level on non-diabetic pts admitted for percutaneous coronary intervention (PCI).

METHODS A total of 2226 non-diabetic pts were enrolled from our single center PCI registry. They were divided into four glycemic level according to their admission non-fasting glucose levels. Group 1; glucose level below 4.0mmol/L, Group 2; 4.0-8.1mmol/L, Group 3; 8.1-11.1mmol.L and Group 4; above 11.1mmol/L was classified as. Their relationships were then studied against adjusted and unadjusted in-hospital mortality with propensity score matching.

RESULTS The in-hospital mortality in non-diabetics admitted for PCI had a near-linear relationship with admission non-fasting glycemic level before and after propensity score matching. In the unadjusted population, as the glycemic level escalating compared to the euglycemic group (Group 2), the impact on in hospital mortality increased. However, this trend was only statistically significant in the highest glucose level (Group 4) after propensity score matched adjustment (OR=20.95, 95% CI 1.17-374.72, P=0.04).

CONCLUSION In non-diabetics admitted for PCI, the admission on-fasting glycemic level showed a near-linear relationship to in-hospital mortality. Glucose level on admission is an important risk marker for non-diabetics admitted for PCI.

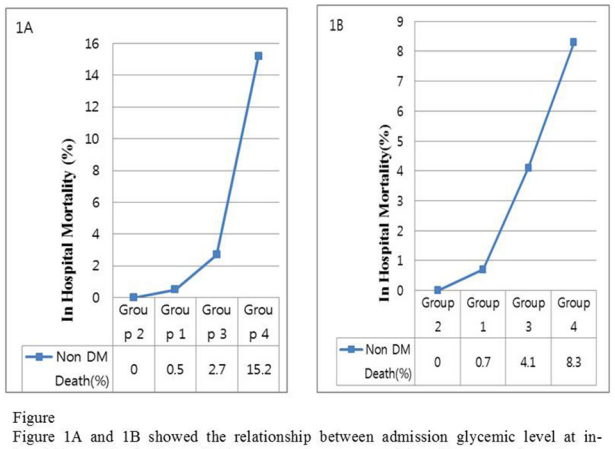

Figure
Figure 1A and 1B showed the relationship between admission glycemic level at in-hospital mortality before and after propensity-score matching. The curve showed near-linear pattern

Groups	Non-diabetics Patients		
	OR	95%CI	P value
Model 1 (Unadjusted)			
Group 1	Reference		
Group 2	0	0	>0.99
Group 3	5.83	1.81-18.83	0.003
Group 4	36.98	11.87-115.22	<0.001
Model 2 (Adjusted)			
Group 1	Reference		
Group 2	0	0	0.99
Group 3	4.62	0.52-41.18	0.17
Group 4	20.95	1.17-374.72	0.04

Model 2 was adjusted after propensity score matching with the following variables: age, gender, hypertension history, smoking history, history of previous MI, history of thrombolytic used and glucose group.

Table
The unadjusted and adjusted odds ratio for in-hospital mortality for various class of glycemic level before and after Propensity Score Marching in non-diabetics

TCTAP A-157

Impaired Renal Function Is Associated with Severe Coronary Artery Disease in Chronic Stable Angina Patients

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BACKGROUND Cardiovascular disease is the leading cause of morbidity and mortality in renal impaired patients. Many of the patients of chronic kidney disease die of cardiovascular disease before requiring dialysis. Cardiovascular disease in renal impaired patient is potentially preventable and treatable. The aim of this study was to evaluate the association between renal impairment and coronary artery disease severity in chronic stable angina patients.

METHODS 110 patients with chronic stable angina who got admitted for coronary angiography were included in the study. They were divided into impaired renal function group (estimated glomerular filtration rate $< 90ml/min/1.73m^2$) and normal renal function group (estimated glomerular filtration rate $\geq 90ml/min/1.73m^2$). The severity of the CAD was assessed by angiographic Vessel score and Gensini score.

RESULTS Mean Gensini score was significantly high in impaired renal function group (42.30 ± 24.9 vs. 25.65 ± 17.9, $p < 0.05$). There was significant negative correlation between estimated glomerular filtration rate and vessel score ($r = -0.30$, $p<0.05$) and between estimated glomerular filtration rate and Gensini score ($r = -0.65$, $p<0.05$). In multivariate logistic regression analysis, after adjustment of other factors estimated glomerular filtration rate remain independent predictors of severe CAD ($p<0.05$, OR -5.73).

CONCLUSION Impaired renal function assessed by estimated glomerular filtration rate is associated with angiographic severe coronary artery disease in chronic stable angina patients and this association is independent of conventional cardiovascular risk factors.

TCTAP A-158

Clinical Features and One-Year Follow-up Study of Diabetic Patients Who Present with Acute Myocardial Infarction

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BACKGROUND To evaluate the clinical characteristics of diabetic patients with acute myocardial infarction and the incidence of major adverse cardiac events after being treated with drug-eluting stents.

METHODS 350 patients who presented with acute myocardial infarction and are treated with drug-eluting stents were classified into 2 groups according to the presence or absence of diabetes mellitus. The clinical characteristics and one-year follow-up results in the two groups were analyzed.

RESULTS The patients with diabetes mellitus were older than the patients without diabetes mellitus(65.50 ± 12.73 VS 60.80 ± 14.38, $p=0.004$). The ratio of male patients was lower in the diabetes mellitus group (58.5% VS 70.1% , $p=0.012$)and the ratio of smoking